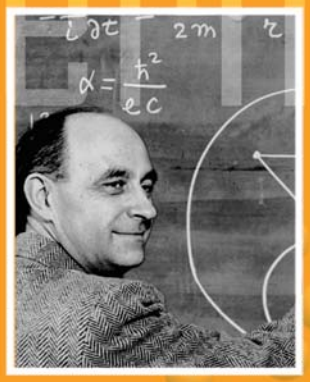

Periodic Element 100

Enrico Fermi

Enrico Fermi (1901 – 1954), was an Italian physicist best known for his work with beta decay, developing the first nuclear reactor, and developing quantum theory. Fermi was awarded the 1938 Nobel Peace Prize for his work on induced radioactivity, a process whereby a stable material is made radioactive after being exposed to radiation. The physicist's work confirmed the existence of undiscovered radioactive elements and brought about the discovery of nuclear reactions induced by slow neutrons. During his career, Fermi became known for his tendency to steer away from using theories and complicated math to come to conclusions. Fermi demonstrated this type of technique in 1945 during the test of the first atomic bomb in New Mexico. When the wave from the blast reached him, he dropped pieces of paper and was able to estimate the bomb's energy yield by measuring how far the paper was blown. Fermi's strategy of arriving at approximate answers quickly and simply without the use of complex calculations became known as the "Fermi method."

Fermium, element number 100 in the periodic table, was named after the physicist. The element's atomic symbol is Fm and has an atomic mass of 257 g/mol. Fermium was first discovered in 1952 by a team led by Albert Ghiorso, after finding Fm-255 amidst the debris after the first hydrogen bomb blast. The team concluded that the Fm-255 isotope was formed when U-238 combined with 17 neutrons as a result of the extreme pressure and temperature of the explosion. Details of these findings were kept secret because of tensions during the Cold War, but were finally released in 1955.

Physics: In Fermi's initial experiments in nuclear bombardment, which of the following was the greatest advantage of bombarding nuclei with neutrons:

W) fast neutrons fission atoms best
X) they have relatively large mass for a subatomic particle
Y) they interact best with electrons and are readily captured into the atom's nucleus
Z) they have no electric charge and are not repelled by the nucleus

Answer: Z) They have no electric charge and are not repelled by the nucleus

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			August 2006 / October 2006		1	2
3	4 Labor Day	5	6	7	8	9
10	11	12 Registration Deadline for October SAT	13	14	15	16 ACT Test Date
17	18 Constitution Day	19	20	21	22 Rosh Hashanah (Begins at Sundown) Registration Deadline for October ACT	23
24 Ramadan (Begins at Sundown)	25	26	27	28	29 Enrico Fermi's Birthday Registration Deadline for November SAT	30

september 2006

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